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Crab-apples. These plants for the decoration of northern gardens are of first-rate importance, and from its early days much attention has been paid at the Arboretum to the collection and study of the different species, hybrids and varieties. The flowering of the Crab-apples is one of the important Arboretum events and, although the season is ten or twelve days late, some of the Asiatic species are already in bloom and during three or four weeks Apple blossoms can be seen here.

From the Crab-apple of southeastern Europe and western and central Asia (*Malus pumila*) most of the Apples of our orchards have been developed, although in some of these the blood of the Crab of northern and central Europe (*Malus sylvestris*) can be traced. The Paradise Apple is a very dwarf form of *Malus pumila* used by nurserymen as a stock for dwarf pomological varieties. The first of the Crab-apples of eastern Asia known to Europeans (*Malus baccata*) was first cultivated in Europe one hundred and thirty years ago. It is a native of eastern Siberia, and is a tall, narrow tree with large white flowers appearing with the leaves, and fruit the size of a large pea. The Siberian Crab, as it is popularly called, is a handsome, very hardy plant; its great value, however, is that, crossed with the cultivated Apple-tree, it has given rise to a race of Apples like the Hyslop and the Transcendent Crabs which can be grown in regions too cold for the successful cultivation of the ordinary Apple. These hybrids are known as Siberian Crabs, and many named varieties can now be found in nurseries in the extreme northern part of the country. They

are fast-growing, erect and shapely trees, and well worth a place in northern gardens for the beauty of their flowers and brilliant scarlet or yellow fruits which are usually oblong or ovate in shape and from an inch to an inch and a half in length. The fruit is acid but makes excellent jellies and preserves for which it is largely used. *Malus baccata* has been used in cold regions as a stock on which to graft the ordinary Apple, but its liability to the blight which attacks Pear-trees reduces its value for this purpose. The largest specimen of *Malus baccata* in the neighborhood of Boston is standing in front of the gardener's house in the Harvard Botanic Garden in Cambridge.

One of the handsomest of the Crab-apples in the Arboretum collection is a Korean variety of *Malus baccata* which has been distinguished as var. *Jackii*. It was raised here in 1905 from seed collected by Mr. Jack near Seoul. The plants, although still small, are shapely in habit with straight clean stems and regularly spaced spreading branches; the leaves are thick, long-stalked, from four to six inches in length, dark dull green above and pale below; the flowers are pure white and nearly two inches in diameter, and the dark crimson shining fruits, which are often half an inch long, hang gracefully on long drooping stems. A widely distributed form of *Malus baccata*, the var. *mandshurica*, differs in its broader, more or less hairy leaves. This tree is distributed from the Amoor region to western China and Japan where it is common northward, and in Hokkaido is often found in Alder woods in the neighborhood of the coast.

Malus prunifolia. In one of its forms (var. *rinki*) this tree has been the most economically valuable of all the Asiatic Apple-trees. *Malus prunifolia*, although it has been known in western gardens for many years, is still unknown as a wild plant, but Wilson found growing wild its variety *rinki* in central and western China. This variety differs from *Malus prunifolia* in the shape of the leaves and the amount of their hairy covering, and in the shape and color of the fruit which varies from greenish yellow to yellow or red. This is the Apple which has been cultivated by the Chinese probably for centuries. The fruit of the cultivated tree seen by Wilson was rarely more than an inch and a quarter in diameter, green or greenish yellow with a rosy cheek, or sometimes almost entirely red and had a pleasant bitter-sweet flavor. He found that the fruit grown in the cold region near the Tibetan border was of better quality than that produced in the warmer regions further east. Until the coming of foreigners into Japan introduced American and European varieties of Apples the var. *rinki* was a commonly cultivated fruit tree in Hondo, although now it has almost entirely disappeared from Japan.

Only the Apples already mentioned, *Malus sylvestris* of western and northern Europe, *M. pumila* of southeastern Europe and western and central Asia, *M. baccata* of eastern Siberia, *M. prunifolia*, var. *rinki* of western China, and the species of eastern North America are of economic importance to man. The fruits of the last are sometimes

used domestically in making jellies and preserves but are not in very general use. All the other Crab-apples are only valuable for the beauty of their flowers and fruits in the decoration of gardens. The American Crab-apples bloom later than the Old World species, and their flowers do not open until the leaves are well grown. The flowers are more or less deeply tinged with pink or rose color and are exceedingly fragrant. The fruits of the eastern species are depressed-globose, light green, sometimes turning pale yellow when fully ripe, lustrous, covered with a waxy exudation, and more fragrant than the fruit of other Apple-trees. The fruit falls without having become soft, and remains on the ground a long time without losing its shape. The fruit of the northwestern species (*M. fusca*) is oblong, not more than three-quarters of an inch in length, yellow-green or yellow often flushed with red, or occasionally entirely red. The flesh of this little apple is thin and dry.

The American Crab-apples are good plants for wood borders and forest glades, and can be used to advantage with the Flowering Dogwood (*Cornus florida*), the different Shad Bushes (*Amelanchier*), and some of the American Hawthorns to enliven forest parks and country roadsides. American Crab-apples, however, are still little known or appreciated by American gardeners, and only one of them, the so-called Bechtel Crab, a double-flowered form of *M. ioensis* of the Mississippi Valley, is found in American nurseries. The flowers of this tree resemble small double pink roses and attract more attention than almost any other plant in the Arboretum. Among the handsomest of the species of eastern Asia as flowering plants are:—

Malus floribunda is probably the best known and the most generally cultivated Crab-apple in this part of the country. When grown naturally it is a broad, tall, round-topped bush, rather than a tree, with wide-spreading branches. The flowers as they open are red and, passing through different shades of rose color, become almost white before the petals fall. The fruit is not much larger than a pea. This plant is one of the most satisfactory of all flowering shrubs which can be grown in this climate for it has never yet been injured by cold, heat, or drought, and never fails to produce its flowers every spring. On some of these plants the fruit drops in early autumn, and on other seedling plants raised in the Arboretum it remains on the branches until early spring and furnishes birds with great supplies of winter food, and for the benefit of the birds plants of this variety should be selected. There are a number of these plants close to the Administration Building where during the winter they are much frequented by pheasants who find shelter in a neighboring Pine grove. A hybrid of *Malus floribunda*, and one of the hybrid forms of *M. baccata* appeared spontaneously in the Arboretum, and has been called *Malus Arnoldiana*; it has the low-branched habit of *M. floribunda* but the flowers and fruits are more than a third larger. This is one of the handsomest of all Crab-apples.

Other Crab-apples to which special attention is called are:—*Malus Halliana*, var. *Parkmanii*, the double-flowered form of a Chinese tree, long cultivated by the Japanese and introduced into this country from Japan more than forty years ago. The bright rose-colored flowers hang on long slender stems and differ in color from those of any other Crab-apple; *Malus Sargentii*, a shrub from northern Japan with wide-spreading branches, pure white flowers with bright yellow anthers, and scarlet fruit which remains on the branches until spring and appears to be unpalatable to birds; *M. Sieboldii*, a Japanese plant better known perhaps under the incorrect name of *M. toringo*, and the last of the Asiatic species in the collection to bloom. There are both shrubby and arborescent forms of this plant which has small nearly white flowers produced in immense quantities and minute fruit which is bright red on some individuals and yellow on others. The variety *callicarpa* of this species is one of the handsomest of the Crab-apples in the collection both in spring and autumn. It is a broad tree-like shrub or small tree with slightly lobed leaves, pink and white flowers an inch in diameter, and brilliant scarlet, lustrous fruits which are half an inch in diameter and are more beautiful perhaps than those of any other Crab-apple. This beautiful plant is little known in gardens and was raised in the Arboretum from seed presented in 1890 by Dr. William Sturgis Bigelow, of Boston. It is impossible in one of these bulletins to more than mention a few of the most important plants in this group, but something will be said of others as they begin to flower. The old Crab-apple Collection is on the left-hand side of the Forest Hills Road next to the group of wild Pear-trees, and a much larger and more complete collection is at the eastern base of Peter's Hill.

Rhododendron (Azalea) poukhanense. Another year adds to the good opinion we have of this plant at the Arboretum, for New England winters have no bad effects on it and it is blooming on Azalea Path more freely perhaps than ever this spring. This low, compact, round-topped Korean shrub is well suited for the decoration of the rock garden and to use in small beds or borders. The large rose-pink flowers are unusually fragrant among those of plants of this class.

Pyrus Calleryana. This Pear-tree, which is widely distributed in central China, is flowering well for the first time in the Arboretum, and can be seen in the new collection of Chinese trees of the Rose Family on the southern slope of Bussey Hill. The flowers are smaller than those of *Pyrus Bretschneideri* and *P. oboidea*, Chinese Pear-trees now in flower in the old Pear Group on the Forest Hills Road, and the small fruit is of no value. This may be a really valuable tree, however, as some American Pomologists are of the opinion that it may prove a blight resisting stock on which to graft garden varieties of the Pear. As the Arboretum plants are the only ones in America large enough to bloom it will require several years to obtain plants enough thoroughly to test its value for this purpose.